



TOQUARTZ
Tech Specifications

TOQUARTZ® Half-Round Fused Quartz Rod Product Catalog

Integrated Engineering & Agile Production
for Demanded Specifications




TOQUARTZ® HALF-ROUND FUSED QUARTZ ROD

TOQUARTZ® is a specialized manufacturer of high-purity quartz products based in China, serving global B2B clients in laboratory instrumentation, biomedical research, and environmental monitoring. With in-house engineering support and flexible production capabilities, we offer both standard and custom TOQUARTZ® Fused Quartz Rod with fast delivery and consistent quality.



Product Overview



TOQUARTZ® half-round fused quartz rods combine the exceptional properties of high-purity quartz with a specialized semi-cylindrical form factor. These premium components feature a flat mounting surface paired with a curved optical/thermal surface, providing unique advantages for specialized applications in optical systems, thermal processing equipment, and precision instrumentation.

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Advantages of Half-Round Design

- Stable Mounting: Flat surface provides secure positioning
- Controlled Light Direction: Curved surface offers predictable optical properties
- Optimized Heat Transfer: Improved thermal contact with mounting surfaces
- Space Efficiency: Compact form factor for space-constrained designs
- Versatile Installation: Simplifies integration into complex systems

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Applications

- **Optical Systems:** Beam shaping, light guides, laser systems
- **Thermal Applications:** IR reflectors, heating elements, thermal shields
- **Medical Equipment:** UV sterilization, analytical instruments
- **Laboratory Equipment:** Sample platforms, optical components
- **Industrial Processing:** High-temperature environments, corrosive settings





TECHNICAL SPECIFICATIONS

I Physical Properties

Parameter	Value / Range	Notes
Diameter Range	5mm – 150mm	Customizable, tolerance $\pm 0.1\text{mm}$
Length Range	50mm – 1400mm	Customizable, tolerance $\pm 0.5\text{mm}$
Half-Round Cut Tolerance	$\pm 0.2\text{mm}$	Precision-controlled semi-cylindrical cut
Density	2.2 g/cm^3	Typical for fused silica
Fracture Modulus	$\geq 350\text{ MPa}$	High mechanical strength



TECHNICAL SPECIFICATIONS

I Physical Properties

Parameter	Value / Range	Notes
Thermal Conductivity	120 – 160 W/m·K	High heat transfer efficiency
Softening Point	~1730°C	Material transition temperature
Working Temperature (Long-term)	1100°C	Stable for continuous use
Working Temperature (Short-term)	1450°C	For peak thermal loads
Thermal Expansion Coefficient	$5.5 \times 10^{-7} / ^\circ\text{C}$	Low expansion, high dimensional stability



TECHNICAL SPECIFICATIONS

II Chemical Properties

Parameter	Value / Range	Notes
SiO ₂ Purity	99% – 99.98%	High-purity fused quartz
Acid Resistance	Excellent (except HF)	Stable in most acidic environments
Alkali Resistance	Good (limited at high temp)	Avoid prolonged exposure to strong bases at high temp
Halogen Resistance	Excellent	Suitable for fluorinated gas environments



TECHNICAL SPECIFICATIONS

III Optical Properties

Parameter	Value / Range	Notes
UV Transmission (200nm)	$\geq 85\%$	High UV transparency
Visible Light Transmission (400–700nm)	$\geq 92\%$	Clear fused quartz
IR Transmission (2.5–4.5 μm)	$\geq 80\%$	Suitable for IR heating and sensing
Refractive Index (at 589nm)	~1.458	Stable optical performance
Surface Finish Options	Polished / Ground / As-cut	Based on application requirements

TECHNICAL SPECIFICATIONS

- High Temperature Stability: Long-term use at 1100°C, short-term up to 1450°C
- Excellent Light Transmission: 120nm-4500nm spectrum coverage
- Superior Chemical Resistance: Stable against acids, bases, and corrosive environments
- Low Thermal Expansion: $5.5 \times 10^{-7}/^{\circ}\text{C}$ coefficient for dimensional stability
- High Mechanical Strength: Fracture modulus up to 350MPa+
- High Purity: SiO₂ content from 99% to 99.98%



SIZE CHART

Model	Diameter (mm)	Length (mm)	Material Purity
AT-QTZ-G037	5	50-1400	99%-99.98%
AT-QTZ-G038	10	50-1400	99%-99.98%
AT-QTZ-G039	15	50-1400	99%-99.98%
AT-QTZ-G040	18	50-1400	99%-99.98%
AT-QTZ-G041	20	50-1400	99%-99.98%
AT-QTZ-G042	24	50-1400	99%-99.98%
AT-QTZ-G043	28	50-1400	99%-99.98%
AT-QTZ-G044	30	50-1400	99%-99.98%
AT-QTZ-G045	5-150	50-1400	99%-99.98%



CUSTOMIZATION OPTIONS

TOQUARTZ® provides extensive customization capabilities for half-round quartz rod:

- **Custom Dimensions:** Diameters from 5mm to 150mm, lengths up to 1400mm
- **Surface Treatments:** Fire-polished, mechanically polished, ground, or as-cut
- **End Face Finishing:** Flat, angled, or special cuts
- **Special Requirements:** Proprietary specifications accommodated



ABOUT TOQUARTZ®

TOQUARTZ® is a specialized manufacturer of high-quality quartz glass products for industrial, laboratory, and optical applications. Our factory-direct approach eliminates intermediaries, providing cost-effective solutions with responsive technical support. We welcome small batch orders and offer 24-hour shipping for standard items.

Contact Information

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TOQUARTZ® - Precision Quartz Solutions for Industry and Research

For technical specifications, custom requirements, or pricing information, please contact our sales team.